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# Sol-gel processed metal-organic framework capillaries for hydrogen isotopes separation

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Hydrogen isotopes are most likely fuels of future nuclear fusion plants. And fast analysis of hydrogen isotopes is very important. Cryogenic gas chromatograph with capillary column is one of the best methods for analyzing hydrogen isotopes. Recently, significant progress has been made to shorten analysis time and realize on-line analysis by cryogenic gas chromatograph, with promising potential for application. However, due to the same chemical properties and the identical kinetic diameters, separation and quantitative analysis hydrogen isotopes is difficult by using their minute difference. Herein, we reported a new method in preparation of metal-organic frameworks capillary column via sol-gel process. Metal-organic frameworks thin film was uniformly coated on the inner wall of the capillary column and the hydrogen isotopes were separated within one minute.

## Biography

Xiaolong Fu has obtained his PhD in Physical Chemistry from Institute of Chemistry, Chinese Academy of Sciences, in 2015. Then, he has joined the Institute of Nuclear Physics and Chemistry, China Academy of Engineering Physics. He mainly focused on the novel microporous and mesoporous materials and applications in hydrogen isotopes separations.

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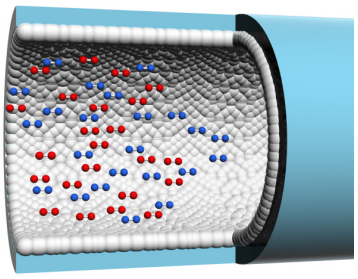

Fig.1 Metal-organic frameworks capillaries for hydrogen Isotopes separation. Blue molecules are hydrogen molecules. Red molecules are deuterium molecules.

**Notes:**